

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of claims:

Claim 1 (Currently Amended): A holographic data storage medium comprising:

a first substrate portion;

a second substrate portion;

a holographic recording material sandwiched between the first and second substrate portions; and

an optically detectable tracking pattern formed on a surface of at least one of the substrate portions, wherein the optically detectable tracking pattern comprises a pattern formed on the surface of at least one of the substrate portions to define a periodic cycle of grating period.

Claim 2 (Original): The holographic data storage medium of claim 1, wherein the optically detectable tracking pattern formed on the surface of at least one of the substrate portions comprises an optically detectable tracking pattern formed on a surface of the medium.

Claim 3 (Cancelled):

Claim 4 (Currently Amended): A The holographic data storage medium comprising: of claim 1,

a first substrate portion;

a second substrate portion;

a holographic recording material sandwiched between the first and second substrate portions; and

an optically detectable tracking pattern formed on a surface of at least one of the substrate portions, wherein the optically detectable tracking pattern comprises a grating pattern formed on the surface of at least one of the substrate portions to define stepped changes in grating period.

Claim 5 (Currently Amended): A The holographic data storage medium comprising: of claim 1,

a first substrate portion;

a second substrate portion;

a holographic recording material sandwiched between the first and second substrate portions; and
an optically detectable tracking pattern formed on a surface of at least one of the substrate portions, wherein the optically detectable tracking pattern is defined by at least two grating patterns formed on the surface of at least one of the substrate portions to define a beat frequency.

Claim 6 (Original): The holographic data storage medium of claim 1, wherein the first and second substrate portions comprise thermoplastic material and the optically detectable tracking pattern comprises a replicated pattern on the surface of at least one of the substrate portions.

Claim 7 (Original): A holographic data storage system comprising:

a holographic medium comprising a first substrate portion, a second substrate portion, a holographic recording material sandwiched between the first and second substrate portions, and an optically detectable tracking pattern formed on a surface of at least one of the substrate portions;

a reference beam to reconstruct a hologram stored in the holographic recording material;
and

a probe beam to diffract off the optically detectable tracking pattern.

Claim 8 (Previously Presented): The holographic data storage system of claim 7, wherein the probe beam has a wavelength and the holographic recording material is insensitive to the wavelength of the probe beam.

Claim 9 (Original): The holographic data storage system of claim 7, further comprising a tracking detector to detect diffracted light associated with the probe beam.

Claim 10 (Original): The holographic data storage system of claim 7, further comprising a data detector to detect the reconstructed hologram.

Claim 11 (Original): The holographic data storage system of claim 7, wherein the optically detectable tracking pattern formed on the surface of at least one of the substrate portions comprises an optically detectable tracking pattern formed on a surface of the medium.

Claim 12 (Original): The holographic data storage system of claim 7, wherein the tracking pattern comprises a pattern formed on the surface of at least one of the substrate portions to define a periodic cycle of grating period.

Claim 13 (Original): The holographic data storage medium of claim 7, wherein the tracking pattern comprises a grating pattern formed on the surface of at least one of the substrate portions to define stepped changes in grating period.

Claim 14 (Original): The holographic data storage medium of claim 7, wherein the tracking pattern is defined by at least two grating patterns formed on the surface of at least one of the substrate portions to define a beat frequency.

Claim 15 (Previously Presented): A method of determining a location on a holographic medium including a substrate and a holographic recording material comprising:

interrogating the holographic medium with a probe beam, wherein the holographic recording material of the holographic medium is insensitive to the probe beam; and

detecting diffracted light associated with the probe beam, the diffracted light being diffracted by a substrate of the medium to indicate a position on the medium.

Claim 16 (Original): The method of claim 15, wherein interrogating the holographic medium with the probe beam comprises moving the probe beam across a radial dimension of the medium, the method further comprising locating a track location on the medium, the track location being defined by a diffraction angle of the diffracted light associated with the probe beam.

Claim 17 (Original): The method of claim 15, wherein interrogating the holographic medium with the probe beam comprises moving the probe beam across a tangential dimension of the medium, the method further comprising locating a track location on the medium, the track location being defined by a diffraction angle of the diffracted light associated with the probe beam.

Claim 18 (Original): The method of claim 15, wherein the holographic data storage medium includes a first substrate portion, a second substrate portion, the holographic recording material sandwiched between the first and second substrate portions, and an optically detectable tracking pattern formed on a surface of at least one of the substrate portions.

Claim 19 (Original): The method of claim 18, wherein the optically detectable tracking pattern formed on the surface of at least one of the substrate portions comprises an optically detectable tracking pattern formed on a surface of the medium.

Claim 20 (Original): The method of claim 15, wherein interrogating the holographic medium with a probe beam includes interrogating the probe beam through the holographic medium.